

# Publications by Jared Miller

## A) JOURNAL PAPERS (PUBLISHED)

- 1) J. Miller, Y. Zheng, M. Sznaier, and A. Papachristodoulou, "Decomposed structured subsets for semidefinite and sum-of-squares optimization," *Automatica*, vol. 137, pp. 110–125, 2022
- 2) J. Miller, D. Henrion, and M. Sznaier, "Peak Estimation Recovery and Safety Analysis," *IEEE Control Systems Letters*, vol. 5, no. 6, pp. 1982–1987, 2021
- 3) J. Miller, M. A. Al-Radhawi, and E. D. Sontag, "Mediating Ribosomal Competition by Splitting Pools," *IEEE Control Systems Letters*, vol. 5, no. 5, pp. 1555–1560, 2021

## B) JOURNAL PAPERS (SUBMITTED)

- 4) J. Miller and M. Sznaier, "Bounding the Distance to Unsafe Sets with Convex Optimization," 2021. arXiv: 2110.14047
- 5) J. Miller and M. Sznaier, "Data-Driven Gain Scheduling Control of Linear Parameter-Varying Systems using Quadratic Matrix Inequalities," 2022. arXiv: 2209.06251

## C) CONFERENCE PROCEEDINGS (PUBLISHED)

- 6) J. Miller and M. Sznaier, "Facial Input Decompositions for Robust Peak Estimation under Polyhedral Uncertainty," *IFAC-PapersOnLine*, vol. 55, no. 25, pp. 55–60, 2022. 10th IFAC Symposium on Robust Control Design ROCOND 2022
- 7) J. Miller, D. Henrion, M. Sznaier, and M. Korda, "Peak Estimation for Uncertain and Switched Systems," in *2021 60th IEEE Conference on Decision and Control (CDC)*, pp. 3222–3228, 2021
- 8) J. Miller, R. Singh, and M. Sznaier, "MIMO System Identification by Randomized Active-Set Methods," in *2020 59th IEEE Conference on Decision and Control (CDC)*, pp. 2246–2251, 2020
- 9) J. Miller, Y. Zheng, M. Sznaier, and A. Papachristodoulou, "Decomposed Structured Subsets for Semidefinite Optimization," in *2020 21st IFAC World Congress*, 2020
- 10) C. Wu, J. Miller, Y. Chang, M. Sznaier, and J. Dy, "Solving Interpretable Kernel Dimensionality Reduction," in *Advances in Neural Information Processing Systems* (H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, eds.), vol. 32, pp. 7915–7925, Curran Associates, Inc., 2019
- 11) J. Miller, Y. Zheng, B. Roig-Solvas, M. Sznaier, and A. Papachristodoulou, "Chordal Decomposition in Rank Minimized Semidefinite Programs with Applications to Subspace Clustering," in *2019 IEEE 58th Conference on Decision and Control (CDC)*, pp. 4916–4921, 2019
- 12) J. Miller and B. Shafai, "A Model of Heave Dynamics for Bagged Air Cushioned Vehicles," in *2019 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 976–981, 2019
- 13) B. Taskazan, J. Miller, U. Inyang-Udoh, O. Camps, and M. Sznaier, "Domain Adaptation Based Fault Detection in Label Imbalanced Cyberphysical Systems," in *2019 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 142–147, 2019

## D) CONFERENCE PROCEEDINGS (ACCEPTED BUT NOT YET PUBLISHED)

- 14) J. Miller, T. Dai, and M. Sznaier, "Data-Driven Superstabilizing Control of Error-in-Variables Discrete-Time Linear Systems," 2022 (CDC 2022)

- 15) J. Miller and M. Sznaier, "Bounding the Distance of Closest Approach to Unsafe Sets with Occupation Measures," in *2022 61st IEEE Conference on Decision and Control (CDC)*, 2022 (CDC 2022)
- 16) F. Bečanović, J. Miller, V. Bonnet, K. Jovanović, and S. Mohammed, "Assessing the Quality of a Set of Basis Functions for Inverse Optimal Control via Projection onto Global Minimizers," 2022 (CDC 2022)

## E) CONFERENCE PROCEEDINGS (SUBMITTED)

- 17) J. Miller and M. Sznaier, "Data-Driven Gain Scheduling Control of Linear Parameter-Varying Systems using Quadratic Matrix Inequalities," 2022. arXiv: 2209.06251
- 18) J. Miller, T. Dai, and M. Sznaier, "Superstabilizing Control of Discrete-Time ARX Models under Error in Variables," 2022. arXiv: 2210.14893
- 19) A. Epstein, N. Magre, and J. Miller, "Time-Frequency Regularized Overlapping Group Shrinkage," 2022

## F) SEMINARS

- 20) Bounding the Distance to Unsafe Sets with Convex Optimization, DCSD Rising Stars, 2nd Modeling, Estimation and Control Conference, Jersey City, October 2-5 2022 (To Occur)
- 21) Tutorials about Convexity, Interior Point Methods, Frank-Wolfe algorithms (with applications to system identification), and Polynomial Optimization, June 27, 2022, From Data to Control, Israeli Association of Automatic Control (with M. Sznaier).
- 22) "Bounding distances to unsafe sets", June 16, 2022, IfA Coffee Talks, ETH Zurich.
- 23) "Bounding distances to unsafe sets", June 14, 2022, LA3 Meeting, EPFL Lausanne.
- 24) "Bounding distances to unsafe sets", June 3, 2022, Journées SMAI MODE, University of Limoges (XLIM).
- 25) Tutorials about Interior Point Methods, Polynomial Optimization, Frank-Wolfe algorithms and variations, and SDP approximations, May 16-20, Sparsity and Big Data in Control, Systems Identification, and Machine Learning, European Embedded Control Institute. Related to (20).
- 26) "Bounding distances to unsafe sets", April 14, 2022, Conic Linear Optimization for Computer-Assisted Proofs, Mathematisches Forschungsinstitut Oberwolfach (MFO). Related to (23).
- 27) "Bounding distances to unsafe sets", June 28, 2021, Brainstorming days on measure and polynomial optimization (BrainPOP), LAAS-CNRS. Related to (23).
- 28) "Data-Driven Peak and Reachability Set Estimation", May 25, 2021, MS112 Methods of Learning Dynamical Systems for Control, SIAM Conference on Dynamical Systems. Related to (38).
- 29) "Analysis and Control of Time-Delay Systems with Occupation Measures", May 3, 2021, BrainPOP, LAAS-CNRS. Work not yet published, in preparation.
- 30) "Exploiting Structure in Rank-Constrained and Approximated Semidefinite Programs", December 19, 2019, TISEM Operations Research Seminar, Tilburg University. Related to (20; 30).

## F) POSTER SESSIONS

- 31) "Safety Analysis using Distance Estimation and Measures," August 24, 2022. CLEVR-AI MURI Yearly Review Meeting, Northeastern University.
- 32) "Exploiting SDP Structure Yields Tighter Approximations," April 9, 2020. RISE, Northeastern University (remote). Related to (20).

- 33) “Exploiting SDP Structure Yields Tighter Approximations.” February 24, 2020. IPAM Control, Learning and Optimization workshop, University of California, Los Angeles. Related to (20).
- 34) “Chordal Decompositions in Rank Minimized SDPs.” May 30-31, 2019. Learning for Decision and Control (L4DC), Massachusetts Institute of Technology. Related to (30).
- 35) “Chordal Decompositions in Rank Minimized SDPs.” May 10, 2019. New England Machine Learning Day, Northeastern University. Related to (30).
- 36) “Scattered data interpolation through B-spline wavelets and the Elastic Net.” April 14, 2017. RISE, Northeastern University.
- 37) “A parallelized Python-based Multi-Point Thomson Scattering analysis in NSTX-U.” October 29, 2014. 56th Annual APS Plasma Physics Conference, New Orleans.